REMARKS

I. Amendment to the Claims

Upon entry of the foregoing amendment, eleven (11) claims are pending in the application. Of the pending claims, claim 50 is independent.

Support for the amendment is provided in the specification at page 7, lines 12-14 and line 25.

II. Rejections under 35 U.S.C. § 103

The Examiner has rejected Claims 50-53 and 57 under 35 U.S.C. §103(a) as being unpatentable over the non-patent literature, Bayliss, in view of Blidschun (US 4,680,163), Peltier (US 5,382,410) and Berkeley (US 3,832,459). It is respectfully submitted that the rejections cannot be maintained against the claims as amended.

Claim 50 as amended recites "spraying an electrically charged photosensitizer having aerosol droplets greater than 50 μm in diameter projected in a stream towards the contaminated surface to coat and wet the contaminated surface."

Spraying droplets greater than 50 μm

1. None of the cited references teaches the claimed spraying of photosensitizer droplets greater than 50 μm.

Bayliss is not even about "spraying," not to mention "droplets greater than 50 μm."

Blidschun teaches a "misting" which provides "extremely small droplets" of sterilizing agent that is "ultrasonically atomized to form a mist." Column 2, Lines 58-60; 64-67. The droplets have "diameters which are less than 10 μm and preferably in the range of 2-4 μm." Column 3, Lines 31-33.

Peltier teaches a "vaporizing emitter" which provides "vapors and microaerosols." Column 2, Lines 38-41. The terms "vapors" and "microaerosols" are believed to refer to particles much smaller than 50 μm, and especially the term "vapors" refer to substances in the gas phase at a temperature lower than their critical temperature. Moreover, the "vapors and microaerosols" are required to be small enough because they are "intended to be used to treat or condition the air of an occupied space or building by introducing vapors which have a pleasant aroma and may also have a biocidal or biostatic effect," Column 1, Lines 15-20, and interacts with "the air molecules and airborne particles, such as dust." Column 8, Lines 46-51. Droplets greater than 50 μm would not be able to serve for this intended purpose.

Berkeley teaches "space sprays forming finely atomized mists or clouds." Column 3, Lines 50-51.

The Examiner contends that Berkeley, in Column 1, Line 65 through Column 2, Line 5, "clearly discloses that disinfectant surface sprays utilize macroparticle sizes which are greater than 50 μm." However, although it is true that Berkeley mentions "macroparticle sizes developed by a surface spray" (which may be greater than 50 μm), this is merely about a general "surface spray." There is no disclosure or even suggestion that such "surface spray" of macroparticles as mentioned is indeed a "disinfectant surface spray."

Moreover, although Berkeley mentions a surface spray of macroparticle sizes (which may be greater than 50 μm), Berkeley only does so in such a way so as to suggest that such macroparticle sizes are **not** within an **acceptable** range of particle sizes. Column 1, Line 65 through Column 2, Line 5 ("there is a wide range of acceptable particle sizes ... wherein a fine mist-like spray may have ... all particles being less than 50 microns compared to the macroparticle sizes developed by a surface spray"). Accordingly, Berkeley mentions macroparticle sizes of spray only to teach away therefrom. In addition, Berkeley only indicates that there are significant and fundamental differences between the spray of microaerosols (well smaller than 50 μm) to form a mist or cloud as in Berkeley and the surface spray of macroparticles (greater than 50 μm as claimed). Not only are their intended purposes different: air conditioning and surface wetting or coating, but the devices or technologies for misting or vaporizing and for spraying are also significantly different.

Furthermore, because the aerosol spray of Berkeley is to be used as space sprays forming "finely atomized mists or clouds," the particle sizes are required to be small enough. Droplets greater than 50 μm as claimed would not be able to serve for this intended purpose. For this reason, Berkeley clearly states that macroparticle sizes should be avoided. Column 6, Lines 54-55 ("creating a coarse droplet spray which is not desirable").

2. It would not have been obvious to modify the droplet size to have aerosol droplets having a diameter greater than 50 μm.

Nowhere in the cited references, taken alone or in combination, is taught or suggested the claimed surface spraying of macroaerosol ("greater than 50 μm") in combination with

electrical charge of photosensitizer for a surface decontamination.

Bayliss is not about "spray." All of Blidschun, Peltier and Berkeley are about "misting," "vaporizing" or "space spraying" to form "mist or cloud." Only Berkeley mentions "macroparticle sizes developed by a surface spray" to state that such macroparticle sizes are not within an acceptable range of sizes for its intended purposes. Indeed, as Berkeley also indicates, misting or vaporizing with microaerosols (well smaller than 50 μm) to form a mist or cloud as in Blidschun, Peltier or Berkeley and the surface spraying with macroparticles (greater than 50 μm as claimed) are fundamentally different in their intended purposes or served functions as well as in their required technologies or devices.

The Examiner contends that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the droplet size in the invention of the combination of Bayliss et al., Blidschun and Peltier, and utilize aerosol droplets having a diameter greater than 50 microns in order to spray the aerosol disinfectant directly onto a surface to be treated as exemplified by the teaching of Berkeley." However, such modification directly contradicts the teachings of Berkeley as Berkeley teaches such macroparticle sizes are not acceptable and "coarse droplet spray is not desirable." Such modification also contradicts the teachings of Blidschun which expressly requires the droplet sizes to be less than 10 μm. "Prima facie case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention." MPEP §2144.05 (III) citing *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997). (emphasis added).

Moreover, because of there are significant and fundamental differences between misting or vaporizing with microaerosols (well smaller than 50 μm) to form a mist or cloud as

in Blidschun, Peltier or Berkeley and the surface spraying with macroparticles (greater than 50 μm as claimed) in their intended purposes or functions and in their principles of operations, the Examiner's suggested modification of the combination of Bayliss, Blidschun and Peltier to utilize macrosized droplets will significantly change the principle of operation thereof. "If proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious." MPEP §2143.01(VI) citing *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) (emphasis added).

Coating and wetting contaminated surface

None of the cited references teaches the claimed spraying of photosensitizer toward the contaminated surface to coat and wet the contaminated surface.

Bayliss is not even about "spraying."

All of Blidschun, Peltier and Berkeley are about "misting," "vaporizing" or "space spraying" to form "mist" or "cloud." No surface wetting or coating is involved with those "misting," "vaporizing," or "space spraying." Although Berkeley mentions "a surface spray," there is no indication that such surface spray is to coat and wet a contaminated surface with photosensitive. Moreover, Berkeley only mentions the "surface spray" to teach away therefrom because it expressly states that such surface spray is not acceptable for its purpose as discussed above. Column 1, Line 65 through Column 2, Line 5. Accordingly, a modification of the "misting," "vaporizing" or "space spraying" to form "mist" or "cloud" of Blidschun,

Peltier and Berkeley to coat and wet a contaminated surface directly contradicts the teachings of Berkeley.

In addition, in Blidschun small interstitial areas remain unwetted between the extremely small droplets. Column 3, Lines 5-9 ("The small interstitial areas which remain between these exceedingly small droplets which in theory remain unwetted, do not offer the micro-organisms which are to be destroyed sufficient room to evade the sterilizing agent." Blidschun expressly argues that large droplets "in the range of 50-150 μm" do not have the benefit of such small interstice. Column 3, Lines 17-24. Accordingly, a modification of Blidschun, Peltier or Berkeley to coat and wet a contaminated surface directly contradicts the teachings of Blidschun.

Furthermore, "misting" or "vaporizing" and "surface spraying" are fundamentally different from each other in their intended purposes and principles of operation. Accordingly, modification of Blidschun, Peltier or Berkeley to coat and wet a contaminated surface will significantly change the principle of operation.

IV. Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that

personal communication will expedite prosecution of this application, he is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

By: _____

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